

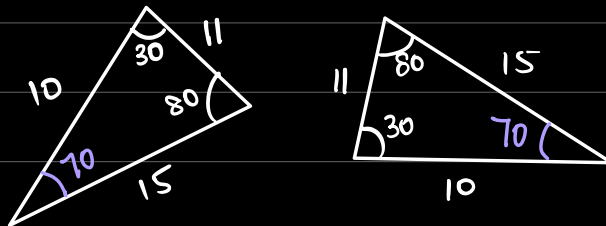
CONGRUENT

IMP: SYLLABUS CHANGE: No need for proving/properties.

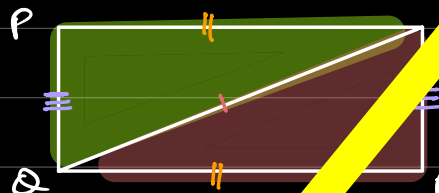
EXACT SAME

Symbol

$\equiv$



1 SSS
side side side



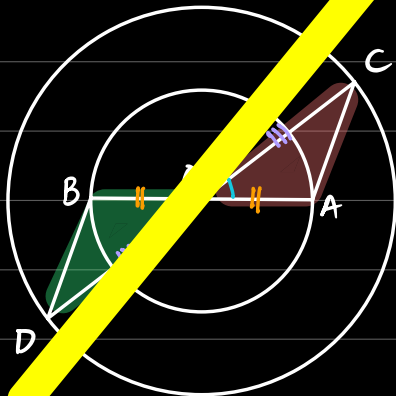
Prove that $\triangle QPS$ and $\triangle SRQ$ are Congruent.

- ① $PS = SR$ (opp sides of rectangle)
- ② $PQ = SR$ (opp sides of rectangle)
- ③ QS is a common length.

Hence by SSS property $\triangle QPS$ is congruent to $\triangle SRQ$.

2 SAS → Angle must be between the two proven sides.

Q: PROVE THAT $\triangle OBD$ and $\triangle OAC$ ARE CONGRUENT.



① $OA = OB$ (radius of small circle)

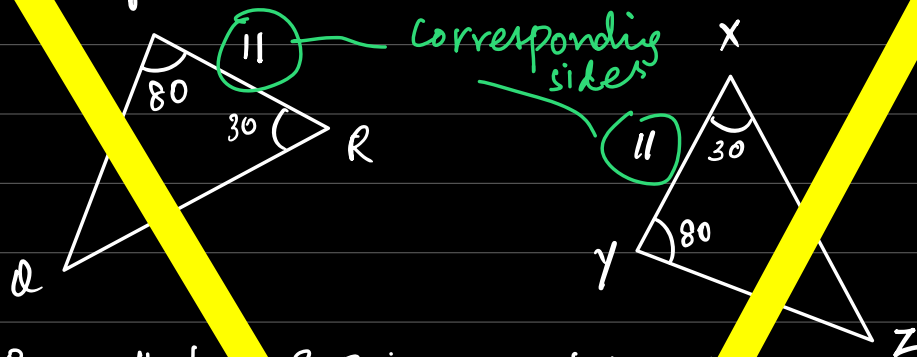
② $OD = OC$ (radius of larger circle)

③ $\angle BOD = \angle COA$ (vertically opposite angles)

Hence by SAS property

$\triangle OBD$ and $\triangle OAC$ are congruent.

3 **AAS** → Side proven should be a corresponding side.



Q: Prove that $\triangle PQR$ is congruent to $\triangle XYZ$.

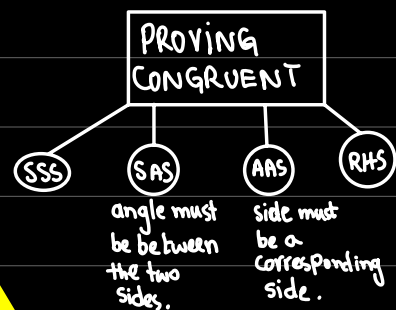
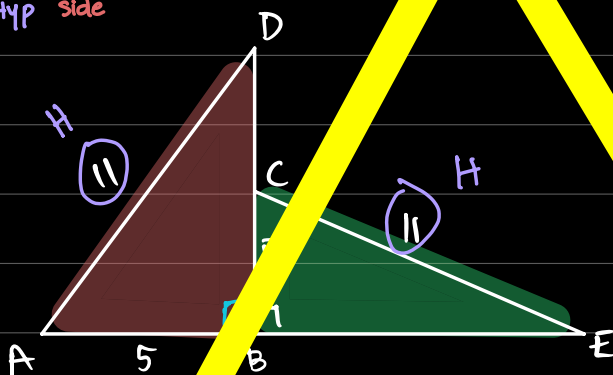
S ① $PR = XY = 11$ (given)

A ② $\angle PQR = \angle XYZ = 80^\circ$ (given)

A ③ $\angle PRQ = \angle XZY = 30^\circ$ (given)

Hence by AAS property $\triangle PQR$ is congruent to $\triangle XYZ$.

4 **RHS**
 Right angle
 Hyp
 side



AA is for similarity.

PROVE THAT $\triangle ABD$ is congruent to $\triangle CBE$

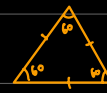
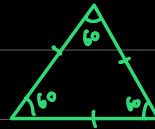
R ① $\hat{A}BD = \hat{C}BE = 90$ (angles on a straight line).

H ② $AD = EC = 11$ (given)

S ③ $AB = CB = 5$ (given)

Hence by RHS Property $\triangle ABD$ is congruent to $\triangle CBE$.

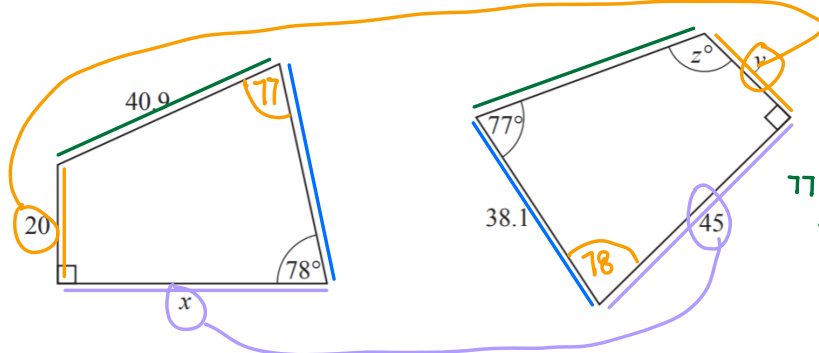
AAA $\rightarrow$ Similarity.



For 2025 onwards :

CONGRUENT MEANS EXACTLY SAME (EQUAL) SHAPE.

8



Total angle = 360

$$77 + 78 + 90 + z = 360$$

$$245 + z = 360$$

$$z = 115$$

These two quadrilaterals are congruent. The lengths are in millimetres.

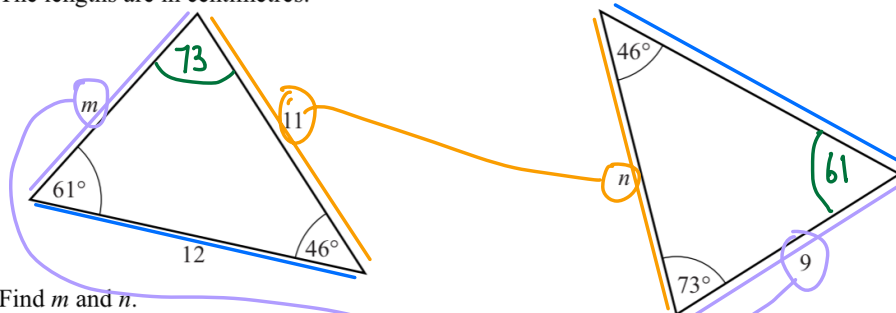
Find the values of x , y and z .

Answer $x = 45$

$y = 20$

$z = 115$ [3]

- 5 These two triangles are congruent.
The lengths are in centimetres.



Find m and n .

Answer $m = 9$

$n = 11$ [2]